

The Louisiana Department of Natural Resources
Acadiana Bays Reef Restoration Feasibility Study
Project Summary Sheet

1. **Purpose of Project** - Evaluate the results on Acadiana Bay conditions (salinity, turbidity, storm surge protection) due to constructing reefs to mimic historical conditions.
2. **Project Area** - Acadiana Bays from Four League Bay on the East through Vermilion Bay on the West.
3. **Principle Components of Project:**
 - Surveying - (19 Transects) Determining existing Bathymetry throughout bay system
 - Engineering - Derivation of reef locations and cross sections using bathymetry and assumed strength of bay bottoms. Estimation of project costs using different mechanisms of construction.
 - Modeling - Evaluate effects on bay hydrological and water quality parameters due to reef establishment at three alternate locations, using two alternate crest heights, and three different fresh water flow conditions.
 - Habitat suitability assessment - Evaluate effect on habitat suitability changes for speckled trout and shrimp.
4. **Principle Findings of Study:**
 - Mathematical models calibrated well
 - Submerged reef not as effective as reef cresting at MHW
 - Alignments exhibited different effects
 - Alignment A Exhibits greater effect on salinity (a few parts per thousand)
Some reduction in turbidity
 - Alignment B Very little effect on salinity in Western Bays
more significant reduction in turbidity during moderate and high fresh water flows
 - Alternate C3 Slightly greater influence of salinity than A3
 - Either A or B Alternatives Costly (\$100 to 400 Million)
Could probably be reduced by optimization.
Alternative C3 would likely be more expensive
 - Habitat Suitability: Changes due to reef construction would not create optimum habitat for speckled trout.
 - Very little decrease in storm surge for all alternatives (<0.5 ft reduction)